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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|-------------------------|-------------------------------|------------------|
| 10/761,060 | 01/20/2004 | Sarang Moreshwar Gadgil | Gadgil 1-1-5-10 (LCNT/125) | 1984 |
| 46363 | 7590 | 10/03/2005 | EXAMINER | |
| MOSER, PATTERSON & SHERIDAN, LLP/ LUCENT TECHNOLOGIES, INC 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702 | | | GELIN, JEAN ALLAND | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2681 | |

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|------------------------------|------------------------|---------------------|--|
| | 10/761,060 | GADGIL ET AL. | |
| | Examiner | Art Unit | |
| | Jean A. Gelin | 2681 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Office Action Summary

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 20 January 2004.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-10 and 15-20 is/are rejected.
7) Claim(s) 11-14 is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 20 January 2004 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 8-10, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (US 6,574,221) in view of Kamitani (2001/056529).

Regarding claims 1, 10, and 20, Petersen teaches a gateway for interconnecting wireless and wireline networks (i.e., MSC interconnects the PSTN and the BS, fig. 1), comprising: a plurality of micro-engines (i.e., processor board 18), each of said micro-engines (PB 18) comprising a memory for storing instructions for performing data flow processing of data packets for interconnecting said wireless and said wireline networks (col. 3, line 53 to col. 4, line 47, col. 5, lines 1-11); and a main processor for performing control processing of data packets (col. 3, lines 53-67); wherein only said main processor comprises an operating system (col. 3, line 53 to col. 4, line 27).

Petersen is silent with respect to performing data flow processing of data packets for a respective stage of a pipeline process.

However, the preceding limitation is known in the art of communications.

Kamitani teaches a pipeline process where the data packet circulates in data-driven processor (section 24), branching the path of pipelines, and using the path of pipelines as accumulator to decrease processing speed of data flow (sections 121-123).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to implement the technique of Kamitani within the system of Petersen in order to avoid disadvantages of congestion and decrease in processing speed.

Regarding claim 8, Petersen in view of Kamitani teaches all the limitations above. Kamitani further teaches wherein the data flow processing of data packets for each stage of the pipeline process is performed by at least one micro-engine (sections 24, 121).

Regarding claim 9, Petersen in view of Kamitani teaches all the limitations above. Kamitani further teaches wherein each micro-engine performs the data flow processing of data packets for at least one stage of the pipeline process (sections 24, 121).

Regarding claim 16, Petersen in view of Kamitani teaches all the limitations above. Kamitani further teaches wherein the data flow processing of data packets in various stages of said pipeline process is performed in parallel by respective micro-engines (sections 24, 62, 125).

Regarding claim 17, Petersen in view of Kamitani teaches all the limitations above. Kamitani further teaches wherein the data flow processing of data packets in each of the stages of the pipeline process is performed by at least one respective micro-engine (sections 24, 62).

Regarding claim 18, Petersen in view of Kamitani teaches all the limitations above. Kamitani further teaches wherein each of the micro-engines performs the data flow processing of data packets for at least one stage of the pipeline process (sections 24, 62, 125).

Regarding claim 19, Petersen in view of Kamitani teaches all the limitations above. Kamitani further teaches wherein the data flow processing of a data packet for each of the stages of the pipeline process is performed in the sequential order of the pipeline process by respective micro-engines (sections 24, 62, 125).

3. Claims 2-7, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (US 6,574,221) in view of Kamitani (2001/056529) further in view of Hooper (US 2004/0252686).

Regarding claim 2, Petersen in view of Kamitani teaches all the limitations above except a memory that is shared by the micro-engines and the main processor.

However, micro-engines shares the same memory with the main processor is known in the art of communications. Hooper teaches a device for processing data packet wherein the microengine shares memory resources with the core processor to store packet information in the shared memory, and efficiently use the available bandwidth (sections 10, 12, 16-19, claim 3). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to implement the technique of Hooper within the system of Petersen in view of Kamitani in order that the device stores packet information in the RAM when there is no available memory in the shared memory, and use the bandwidth of the memory more efficiently.

Regarding claim 3, Petersen in view of Kamitani further in view of Hooper teaches all the limitations above. Hooper further teaches wherein said shared memory

comprises a multi-level hierarchy (i.e., arrange memory references to optimize memory bandwidth, section 17).

Regarding claim 4, Petersen in view of Kamitani further in view of Hooper teaches all the limitations above. Hooper further teaches wherein said shared memory comprises at least one SDRAM memory bank and at least one SRAM memory bank (sections 12, 13, 17, and 19).

Regarding claim 5, Petersen in view of Kamitani further in view of Hooper teaches all the limitations above. Hooper further teaches wherein said SRAM memory bank stores at least one of active sessions, data structures and tables (sections 12, 13, 17, and 19).

Regarding claim 6, Petersen in view of Kamitani further in view of Hooper teaches all the limitations above. Hooper further teaches wherein a Packet Routing Table is stored in said SRAM memory bank (sections 12, 13, 17, and 19).

Regarding claim 7, Petersen in view of Kamitani further in view of Hooper teaches all the limitations above. Hooper further teaches wherein said SDRAM memory bank stores at least one of packet payload and inactive always-on session overflow from said SRAM memory bank (sections 12, 13, 17, and 19).

Regarding claim 15, Petersen in view of Kamitani all the limitations above except wherein after said global main processor performs the control processing of a received data packet, the processed data packet is forwarded to a queue for further data flow processing by said micro-engines.

However, the preceding limitation is known in the art of communications. Hooper teaches a microengine includes a RAM, the RAM stores microprogram that is loadable by the core processor, the controller in the microengine process the microprogram (sections 17-19, 24). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to implement the technique of Hooper within the system of Petersen in view of Kamitani in order that the device stores packet information in the RAM when there is no available memory in the shared memory, and use the bandwidth of the memory more efficiently.

Allowable Subject Matter

4. Claims 11-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

| | | |
|----------------|-----------------|------------|
| Shaver et al. | US 2003/0114153 | 06/19/2003 |
| Dougherty | US 2003/0224782 | 12/04/2003 |
| Keating et al. | US 2004/0082352 | 04/29/2004 |
| Smith et al. | US 2005/0018654 | 01/27/2005 |

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|-------------------|-----------------|------------|
| Singh et al. | US 2005/0108315 | 05/19/2005 |
| Kaganoi et al. | US 2003/0012198 | 01/16/2003 |
| Davis et al. | US 6,829,697 | 12/07/2004 |
| Rhoades et al. | US 2003/0041163 | 02/27/2003 |
| Wishneusky et al. | US 2005/0036495 | 02/17/2005 |

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean A. Gelin whose telephone number is (571) 272-7842. The examiner can normally be reached on 9:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGelin
September 28, 2005

JEAN GELIN
PRIMARY EXAMINER

Jean Aloland Gelin